

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 1-9, 13-25, 29-45, and 49-53 are pending in the application. Claims 1-5, 9, 13, 16-25, 29-41, 45, 49, 52, and 53 are amended; and Claims 10-12, 26-28, and 46-48 are canceled without prejudice or disclaimer. Support for amended independent Claims 1, 18, 34 and 37 can be found in the original specification, claims and figures.¹ Claims 9, 25 and 45 are amended to incorporate the subject matter of dependent Claims 11, 27 and 47. All other claim amendments are presented only to correct matters of form. Thus, no new matter is presented

By way of summary, the Official Action presents the following issues: the specification was objected to because the title of the invention was not descriptive and the disclosure was objected to because of informalities; Claims 5-8, 11, 27, 35, 41-44, 47 were rejected under 35 U.S.C. §112, second paragraph as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; Claims 9, 12, 25, 28, 45 and 48 were rejected under 35 U.S.C. §102(a) as anticipated by Davidson et al. (U.S. Patent No. 6,246,345, hereinafter Davidson); Claims 1, 2, 18, 34, 37, and 38 were rejected under 35 U.S.C. §103(a) as unpatentable over Iwakami et al. (U.S. Patent No. 5,684,920, hereinafter Iwakami) and Davidson; and Claims 13, 16, 17, 29, 32, 33, 36, 49, 52 and 53 were rejected under 35 U.S.C. §102(a) as unpatentable over Yamagami et al. (U.S. Patent No. 5,072,290, hereinafter Yamagami)

Claims 14-15, 21-24, 30-31 and 50-51 were indicated as allowed; Claims 3-4, 10, 19-20, 26, 39-40 and 46 were objected to as dependent upon a rejected base claim, but would be allowable if rewritten in independent form; Claims 5, 35 and 41 were indicated as allowable

¹ Specification for example at Figures 15 and 16, and page 29, line 11-page 32, line 19.

if rewritten to overcome the rejection under 35 U.S.C. §112, discussed above, and Claims 11, 27 and 47 were objected to as dependent upon a rejected base claim, but would be allowable if rewritten in independent form and amended to overcome the rejection under 35 U.S.C. §112, discussed above.

Applicant's appreciatively acknowledge the indication of allowable subject matter. However, since Applicants consider that amended independent Claims 1, 18 and 37 patentably define over the prior art, dependent Claims 3-4, 19-20 and 39-40 are presently maintained in dependent form.

Claims 11, 27 and 47 were objected to as dependent upon a rejected base claim, but would be allowable if rewritten in independent form and to overcome the rejection under 35 U.S.C. §112, second paragraph, set forth in the outstanding Official Action. In response, Claims 9, 25 and 45 are amended to incorporate the subject matter of canceled Claims 11, 27 and 47, respectively, and are amended to overcome the rejection under 35 U.S.C. §112, second paragraph. Accordingly, Applicant respectfully request the rejection of Claims 9, 25 and 45 under 35 U.S.C. §102(a) as unpatentable over Yamagami be withdrawn.

Claims 5, 35, and 41 were rejected under 35 U.S.C. §112, second paragraph, but were indicated as allowable if rewritten to overcome this rejection. Specifically, the phrase "said color difference" in Claims 5, 35 and 41 was rejected for failing to have proper antecedent basis. In response Claims 5, 35 and 41 are amended to recite "a color difference" instead of "said color difference". Accordingly, applicant respectfully requests the rejection of Claims 5-8, 35 and 41-44 under 35 U.S.C. §112, second paragraph be withdrawn.

Claims 1, 18, 34 and 37 were rejected under 35 U.S.C. §103(a) as unpatentable over Iwakami and Davidson. Applicants respectfully traverse this rejection.

Amended Claim 18 relates to a method for processing a color signal extracted from image signals for an image processing system. The method includes quantizing the color

signal over a plurality of quantization regions such that a distance in a uniform color space per unit error caused by the quantization of the color signal in each of the quantization regions is within a predetermined value.

This method allows for improved color signal quantization and compression while increasing the speed by which quantization and color signal processing can take place.²

Amended independent Claims 1, 34 and 37 recite substantially similar features, but are directed to alternative statutory classes.

Iwakami describes an acoustic signal transform coding method having a high-efficiency envelope flattening method. Specifically, Iwakami describes that a quantization error is controlled to be not greater than a predetermined acoustically permissible value.³

Davidson describes using gain-adaptive quantization and non-uniform symbol lengths for improved audio coding. Davidson describes that a split-interval quantizer may be used to map a transform (72) into an appropriate interval, and pass the mapped values to the quantizer (74). The quantized signals are then compared against a dequantizer (or model) and the mapped points (86 and 88) are compared against a decision point (87).⁴

However, neither Iwakami nor Davidson teach or suggest quantizing the color signal over a plurality of quantization regions such that a distance in a uniform color space per unit error caused by the quantization of the color signal in each of the quantization regions is within a predetermined value, as recited in amended Claim 1.

Accordingly, Applicants respectfully requests that the rejection of Claim 1 under 35 U.S.C. §103(a) be withdrawn. For substantially the same reasons as given with respect to amended Claim 1, it is also submitted that Claims 18, 34 and 37 patentably define over the applied prior art.

² Specification at page 1, lines 12-16, and page 4, lines 9-15.

³ Iwakami at Fig. 22, and col. 22, lines 1-16.

⁴ Davidson at Figs. 9B-9C and col. 18, lines 37-67.

Claims 13, 16, 29, 32, 36, 49 and 52 were rejected under 35 U.S.C. §102(a) as anticipated by Yamagami. Applicants respectfully traverse this rejection.

Amended Claim 29 relates to a method for processing a plurality of color signals extracted from image signals for an image processing system. The system includes quantizing one of said plurality of color signals depending on other color signals which are not presently quantized. Amended independent Claims 13, 36 and 49 recite substantially similar features, but are directed to alternative statutory classes.

Yamagami discloses a technique in which the quantization of a color component is controlled in relation to luminescence only. Yamagami describes that the luminescence (Y), color difference (R-Y) and color difference (G-Y) are defined as components and the quantization is controlled on the basis of the luminescence parameter (Y).⁵ In contrast, amended Claim 13 recites that the quantization of one of a plurality of color signals is controlled on the basis of another not presently quantized color signal. Yamagami fails to teach or disclose such a feature.

Amended Claim 32 relates to a method for processing first and second color image signals extracted from image signals for an image processing system. The method includes the step of quantizing the first color signal and a distance of a position from a locus of points of equal values of the first and second color signals. The position corresponds to the first and second color signals on a plane specified by the first and second color signals. Amended independent Claims 16 and 52 recite substantially similar features, but are directed to alternative statutory classes.

As stated above, Yamagami describes that the quantization errors of the color components depend on the luminance⁶ and Yamagami describes a relationship between R-Y and δR , but there is no description concerning the relationship between R-Y and δB . In

⁵ Yamagami at col. 4, lines 10-28.

⁶ Yamagami at col. 7, lines 3-17.

contrast, amended Claim 32 recites that the permissible quantization error of a first color signal is influenced by other color signal. As discussed above, Yamagami fails to teach or disclose such a feature.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-9, 13-25, 29-45, and 49-53 is definite and patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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